

REMARKS

In the Office Action, claims 1-5, 8-19 and 44-46 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 5,633,939 to Kitani et al. (“Kitani”), claim 50 is rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 6,549,587 to Li (“Li”) and claim 74 is rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent No. 6,195,438 to Yumoto et al. (“Yumoto”),

In the Office Action, claims rejected under 35 U.S.C. §103(a) include claim 6 which is rejected as allegedly being unpatentable over Kitani in view of U.S. Patent No. 6,324,229 to Browder (“Browder”), claim 7 which is rejected as allegedly unpatentable over Kitani in view of Browder and further in view of U.S. Patent No. 4,947,133 to Thomas (“Thomas”), claims 20-23 and 25-26 which are rejected as allegedly unpatentable over Kitani in view of U.S. Patent No. 4,628,526 to Germer (“Germer”), and claim 24 which is rejected as allegedly unpatentable over Kitani in view of Germer and further view of U.S. Patent No. 5,444,788 to Orban (“Orban”).

In the Office Action, claims rejected under 35 U.S.C. §103(a) also include claims 47-49 which are rejected as allegedly being unpatentable over Kitani in view of U.S. Patent No. 4,376,916 to Glaberson (“Glaberson”), claims 50-73 and 75-82 which are rejected as allegedly unpatentable over U.S. Patent No. 5,832,097 to Armstrong et al. (“Armstrong”) in view of U.S. Patent No. 5,457,811 to Lemson (“Lemson”).

The Office Action indicates that claims 83-99 include allowable subject matter. Claims 27-43 are withdrawn from consideration. In this response, claims 1, 4, 5, 8, 11, 12, 20, 25, 44, 48-72, 74, 83 and 90 are amended, claims 100 and 101 are new and claims 26 and 47 are canceled. Upon entry of the amendments, claims 1-25, 44-46 and 48-100 will be pending in the application. Applicant incorporates by reference the arguments presented in response to prior Office Actions.

Allowable Subject Matter

Applicant thanks the Examiner for acknowledging the allowable subject matter of claims 83-99 and has amended the claims as suggested. Specifically, each of claims 83 and 90 has been amended to include the elements of previously presented claims 1, 5 and 8. Claims 84-89 and claims 91-99 now ultimately depend from now independent claims 83 and 90 respectively. Consequently, Applicant respectfully submits that claims 83-99 are allowable as presented.

The Rejections under 35 U.S.C. § 102

In rejecting claim 1, the Office Action suggests that Kitani teaches all elements of the claim arranged as they are in claim 1. Applicant respectfully disagrees for the reasons previously presented and for the additional reasons provided below.

Applicant has amended claim 1 to better set forth certain aspects of the claimed invention. As amended, claim 1 requires an input signal, gain calculate logic responsive to the input signal for generating a gain signal representative of a gain value, and synchronizer logic responsive to the input signal and the gain signal for synchronizing the input signal and the gain signal to provide an output signal.

Kitani does not teach or suggest, *inter alia*, a gain signal representative of a gain value as required in amended claim 1. Instead, Kitani shows a device in Figs. 1, 4 and 5 that includes an up/down counter 16 in which the direction of count is controlled by the output of a comparator 15. Kitani explicitly teaches that “the up/control counter 16 performs the up-counting or down-counting operation on the basis of the level of the output signal of the comparator 15...” Kitani, col. 6, lines 61-65. Kitani’s up/down control signal is not representative of the output of the up/down counter. The level of Kitani’s up/down control signal is affected by the level of the input signal regardless of up/down counter current output and the level of the up/down signal affects the up/down counter only at the time that the up/down counter 16 is clocked. Consequently, the up/down control signal is neither determinative nor representative of a gain value. Therefore, Kitani cannot be said to anticipate the gain signal required in claim 1 and the rejection of claim 1 should be withdrawn.

Furthermore, Kitani does not teach **both** the gain calculate logic **and** the synchronizer logic required in claim 1. As shown above, the up/down control signal does not anticipate a gain signal as required in claim 1 and, at most, only Kitani’s up/down counter 16 (in concert with other elements of Kitani’s system) could be argued as teaching a gain signal. If so argued, the Kitani up/down counter 16 cannot also be construed as a component of the required synchronizer logic that is responsive to the input signal and the gain signal and which is for synchronizing the input signal and the gain signal. Kitani does not explicitly teach the required synchronization logic and no other elements of Kitani can be found that impliedly teach synchronization of input and gain signals. Therefore, the §102 rejection of claim 1 should be withdrawn for at least these additional reasons.

Regarding amended claim 4, Kitani does not teach providing a synchronized gain signal and a delayed input signal to a gain cell as required by the claim. Even adopting, *arguendo*, the interpretation presented in the Office Action of Kitani's volume control 11 as a gain cell and up/down counter 16 as a synchronizer, Kitani cannot be said to teach the required synchronized gain signal or delayed input signal. As illustrated in Fig. 5 of Kitani, the output of up/down counter 16 controls amplification of input signal 10. Input signal 10 is not delayed, but directly drives the Op Amp 11b. No other inputs to this volume controller 11 are taught in Kitani. Therefore, Kitani does not teach providing two signals to a gain cell where one signal is a synchronized gain signal and the other signal is a delayed input signal. For at least this additional reason, the rejection of amended claim 4 cannot be sustained.

Regarding the rejections of claims 5-25, Kitani does not disclose every element of these claims arranged as they are in the claims. For example, Kitani does not teach generating a gain signal only after occurrence of a predetermined condition. Instead, Kitani's up/down control signal expressly affects the count recorded by up/down counter 16 *during* generation of volume control 11 gain. Specifically, variations in Kitani's input voltage can cause counter 16 to change direction of count of up/down counter 16. Thus, Kitani's up/down control signal merely changes the *direction of change* of the gain provided to volume controller 11. If no transition occurs at the output of Kitani's comparator 15, counter 16 continues to count in its current direction; when a transition occurs at comparator 15 output, counter 16 begins to count in the opposite direction. Thus, gain calculation is continuous and is not started or stopped based on any change in predetermined condition of the input signal. Therefore, for at least this additional reason, the rejections of claims 5-25 are improper and should be withdrawn.

Regarding claims 44-46, Applicant has amended claim 44 to require an input comprising a plurality of estimator signals. This limitation was previously found in now canceled claim 47. Kitani does not teach a compander having as an input more than one power estimator signals. For at least this additional reason, the rejection of claims 44-49 should be withdrawn.

Regarding claim 50, Applicant has amended claim 50 to require the claimed device to comprise a compander and a signal processor that produces a power estimate. Li does not teach or suggest a compander or the production of a power estimate. Therefore, the §102 rejection of claim 50 should be withdrawn.

Regarding claim 74, Applicant has amended claim 74 to depend from claim 8. Yumoto does not teach or suggest a compander and does not teach the elements required in a compander according to claim 8. Furthermore, claim 74 is patentable for at least the reasons that claim 8 is allowable. Therefore, the rejection of claim 74 is should be withdrawn.

The Rejections under 35 U.S.C. § 103

Given the foregoing deficiencies of Kitani and for the additional reasons provided below, Applicants respectfully submit that the claim rejections based upon 35 U.S.C. §103(a) are improper, and that an ordinarily skilled artisan would not have been motivated to combine the references in the manner suggested by the Examiner or to reasonably expect a successful outcome from such combination.

Regarding claims 6-7, 20-26 and 47-49 Applicant respectfully submits that these claims are allowable for at least the reasons the independent and intervening claims from which they depend are allowable. Additionally, no combination of Thomas, Germer and Glaberson cures the deficiencies of Kitani.

Regarding claims 50-73 and 75-82, Applicant respectfully submits that no motivation or expectation of success could have existed to combine Anderson with Lemson to obtain the presently claimed inventions. Specifically, there is insufficient structural similarity between the claimed companders and the prior art subject matter, and the prior art offers no suggestion or reason or motivation to make the claimed compositions. Therefore, no *prima facie* case of obviousness can be made.

Armstrong and Lemson share no common classification and, during prosecution of these references, no common field was searched. Armstrong is directed to companders used in hearing aids while Lemson is directed to RF transmission links. *See Abstracts of Armstrong and Lemson*. A skilled artisan operating in the field of RF transmissions and seeking to improve the dynamic range of a transmission link comprising RF transmitters would not have looked to companders used for processing low frequency audio signals in hearing aids. Similarly, one skilled in the art of processing low frequency signals received from audio transducers would not have sought solutions in the field of radio frequency transmission. Therefore, no motivation, suggestion or reason to combine Armstrong or Lemson could have been apparent in the references. Furthermore, since there is no structural similarity between the individual references

cited in the Office Action, no structural similarity can be reasonably found between the cited art and the presently claimed inventions and no prima facie case of obviousness has been presented.

As amended, claim 50 requires a first input comprising at least one local power estimator signal, a second input comprising at least one external power estimator signal, a first signal processor for processing the first input and the second input to produce a final power estimate. As acknowledged in the Office Action, Armstrong does not teach power estimator signals. The Office Action suggests that it would have been obvious to provide Lemson-taught power estimator signals as Armstrong's input signals 60 and 62. However, such substitution of power measurement signals for filtered audio signals, when subsequently combined, amplified and applied to loudspeaker 72, could not have been expected to generate a discernible audio output at Armstrong's loudspeaker 72 representative of the audio signal detected by microphone 32. For example, if the frequency of the input provided by Armstrong's microphone 32 changed from a low to a high frequency without any change in signal power, no change in the audio output of loudspeaker 72 would be detectable in an Armstrong-Lemson device. However, the purpose of Armstrong is to assist a hearing aid user to more easily detect such frequency changes. Therefore, the modification of Armstrong proposed in the Office Action would render the Armstrong invention unsatisfactory for its intended purpose, and no suggestion or motivation could have existed to make the proposed modification. *See In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

For at least these reasons, the rejections of claims 50-73 and 75-82 are improper and should be withdrawn.

Amendments To The Claims

Claims 100 and 101 are added and the amendments to claims 1, 4, 5, 8, 11, 12, 20, 25, 44, 48-72, 74, 83 and 90 are provided to better set forth certain aspects of the invention and to advance prosecution. Certain of the amendments correct minor grammatical or typographical errors. Certain of the amendments address dependency issues arising from cancellation of claims 26 and 47. No new subject matter is added to the Application and the new claim and amendments are fully supported by the Specification.

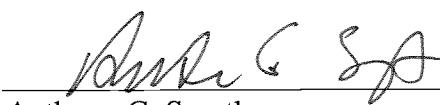
CONCLUSION

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition of allowance and a Notice to that effect is earnestly solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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